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Patent Number	Patent Title	Abstract
US10890783B2	Method of forming a film with a lenticular lens array	According to one aspect of the invention, there is provided a method of forming a film with a lenticular lens array, the method comprising providing a substrate; providing a mold having a plurality of nano-scale to micro-scale cavities that form the lenticular lens array on the substrate; having the mold contact the substrate; and forming the lenticular lens array by allowing portions of the substrate to partially fill the plurality of cavities.
US10881677B2	Composition for modulating IRAK1	The present invention relates to the treatment of breast cancer, more particularly triple negative breast cancer (TNBC), with the use of an inhibitor of Interleukin 1 Receptor Associated Kinase 1 (IRAK1) such as ginsenosides. It also relates to a method for aiding in categorising or determining prognosis in a breast cancer patient or in selecting a therapeutic strategy comprising assessing the level of IRAK1 nucleic acid, protein or activity in a sample and, in some aspects, further assessing the paclitaxel resistance status of the patient and if the patient is resistant to paclitaxel therapy, treating the patient with an inhibitor of IRAK1 activity. In addition, a screening method for identifying a compound useful for treating breast cancer comprises determining the effect of a test compound on IRAK1 nucleic acid, protein or activity level and selecting a compound that reduces said level.
US10882737B2	Through silicon interposer wafer and method of manufacturing the same	A through silicon interposer wafer and method of manufacturing the same. A through silicon interposer wafer having at least one cavity formed therein for MEMS applications and a method of manufacturing the same are provided. The through silicon interposer wafer includes one or more filled silicon vias formed sufficiently proximate to the at least one cavity to provide support for walls of the at least one cavity during subsequent processing of the interposer wafer.
US10870653B2	WNT pathway modulators	The present invention relates to compounds of formula (I), combinations and uses thereof for disease therapy, or a pharmaceutically acceptable salt, solvate or polymorph thereof, including all tautomers and stereoisomers thereof wherein each of R1, R2, R3, R4, R5, W, X, Y, Z, and n is as defined herein.
US10869804B2	Method and system for using haptic ge reflector may define a switching module. The	
	2,4,5-tri-substituted azole-based casein kinase 1 inhibitors as inducers for cardiomyogenesis	This invention relates to a method for inducing or enhancing the differentiation of pluripotent stem cells into cardiomyocyte via casein kinase 1 inhibition said method comprising culturing the stem cells in the presence of a medium comprising a casein kinase 1 inhibitor of the formula (I) or (II) or a stereoisomer, tautomer, or a salt thereof wherein R1, R2 a
alkenyl, alkynyl, heterocyclyl, heteroaryl or aryl; X represents NR4, O or S; and R4 represents hydrogen, optionally substituted alkyl, alkenyl, alkynyl, heterocyclyl, heteroaryl or aryl. The method can be used in the late phase of stem cell differentiation and in the compounds of formula (I) or (II) in combination with other small molecules can lead to especially high differentiation of stem cells into cardiomyocytes. The invention further relates to		

[US10856799B2](#)

Three-dimensional representation of

US10832492B2	Panoramic visualization of coronary arterial tree	The present disclosure generally relates to an automated method and system for generating a panoramic visualization of a coronary arterial tree of a subject. The method comprises: acquiring an image volume of a thoracic cavity of the subject, the image volume providing a three-dimensional (3D) representation of the thoracic cavity; isolating a coronary structure in the 3D representation by abating one or more other anatomical structures in the thoracic cavity; abating one or more portions of the coronary structure in the 3D representation that attenuate visualization of the coronary arterial tree; generating, by maximum intensity projection (MIP), a plurality of MIP images of the coronary structure from the 3D representation; and compositing the MIP images to generate the panoramic visualization of the coronary arterial tree.
US10822723B2	Fusion protein crystal comprising a moiety	A protein crystal comprising a first protein crystal having available space in the lattice, wherein a second protein crystal and a moiety can be accommodated in the available space in the lattice. The first and second proteins are co-expressed from one or more nucleic acid constructs. In a preferred embodiment, the first protein is the p21-activated kinase PAK4, the second protein is the PAK4 kinase inhibitor Inka1, and the moiety comprises a reporter molecule such as fluorescent proteins or tags and is fused to the iBox or iBox-C or Inka1. Preferably the

[US10809182B2](#)

Differential polarisation imaging and
imaging precision ellipsometry

Methods and systems for imaging precision ellipsometry of a sample are provided. The method includes shining a source of linearly polarised light on a surface of the sample wherein light reflected off the surface of the sample has elliptic polarisation. The method further includes converting polarisation of the light reflected off the surface of the sample into linear polarisation suitable for a polarisation modulator by a retarder and oscillating a polarisation modulator to measure the polarisation rotation of the polarised light passing through the retarder. In addition, the method includes synchronising acquisition of images of the light from the retar

US10767230B2	MicroRNA biomarker for the diagnosis and treatment of gastric cancer	Disclosed are methods of determining the likelihood of a subject having or developing a gastric cancer. The methods comprise measuring the expression level of at least one miRNA having at least 90% sequence identity with an miRNA as described herein in a non-cellular biofluid sample obtained from the subject, wherein differential expression of miRNA expression in the sample obtained from the subject, as compared to a control, may be indicative of the subject having gastric cancer and wherein the miRNA may be either an miRNA listed as "up-regulated" or an miRNA listed as "down-regulated". Also disclosed is a method of determining the likelihood of a subject having or developing a stage of a gastric cancer.
US10763348B2	Group III nitride based high electron mobility transistors	The invention provides a product and a manufacturing process for a high power semiconductor device. The semiconductor device comprises a GaN/AlGaIn epilayer structure on an SOI substrate with a thick, uninterrupted GaN layer for use in high-power applications.
US10752787B2	Tailorable surface topology for antifouling coatings	Embodiments are directed to a method of making an antifouling and bactericidal coating with tailorable surface topology. The method includes depositing a layer of branched polyethyleneimine (BPEI) and diamino-functionalized poly(propylene oxide) (PPO) in a mixture of water and organic solvent on a substrate to form a layer of BPEI/PPO. The method includes depositing a layer of glyoxal in a water-containing solution on the = I M BPEI/PPO. The method further includes coating, where the curing induces local

US10718012B2	Non-motorized optical multiplexing for the simultaneous detection of DNA target amplicons in a polymerase chain reaction solution	A multiplexed polymerase chain reaction (PCR) DNA detection system and a method for DNA detection within the PCR system are provided. The PCR DNA detection system includes a color charge-coupled device (CCD) camera, fluorophore-quencher probes and an imaging chamber. The fluorophore-quencher probes are selected in response to fluorophores quenched by the fluorophore-quencher probes corresponding to three selected primary colors and peak channel responses of the CCD camera such that emission profiles of the fluorophores substantially match the three selected primary colors and peak emission profiles of the fluorophores correspond to the peak RGB channel responses of the CCD camera. A DNA sample and the fluorophore-quencher probes are located within the imaging chamber. The color CCD camera is focused on the imaging chamber for simultaneous detection of up to three targets from fluorescence of the DNA sample and the fluorophore-quencher probes.
US10717798B2	Polymeric composition	A polymeric composition comprising (i) a plurality of monomers selected from (a) a carboxylic acryloyl monomer; (b) a sulfonic acryloyl monomer; (c)

US10702610B2	Method of making sulfur-containing polymers from hexahydrotriazine and dithiol precursors	Polythioaminal polymers are made from hexahydrotriazine precursors and dithiol precursors. The precursors are blended together and subjected to mild heating to make the polymers. The polymers have the general structure wherein each R1 is independently an organic or hetero-organic group, each R2 is independently a substituent having molecular weight no more than about 120 Daltons, X and Z are each a sulfur-bonded species, at least one of X and Z is not hydrogen, and n is an integer greater than or equal to 1. X and Z may be hydrogen or a functional group, such as a thiol-reactive group. The reactive thiol groups of the polythioaminal may be used to attach thiol-reactive end capping species. By using water soluble or water degradable dithiols, such as polyether dithiols, water soluble polythioaminals may be made. Some such polymers may be used to deliver therapeutics with non-toxic aqueous degradation products.
US10701107B2	Deterministic load balancing of IPSec processing	Certain embodiments described herein are generally directed to deterministic load balancing of processing encapsulated encrypted data packets at a destination tunnel endpoint. In some embodiments, an IPSec component residing within a destination tunnel endpoint is configured to select a CPU core ID of a virtual CPU using a CPU selection function. In some embodiments, the IPSec component selects an SPI IF he

[US10683382B2](#)

Copolymer comprising a lignin or lignin derivative and a poly(alkylene oxide) alkyl ether (meth)acrylate, and a hydrogel comprising the copolymer

[US10679860B2](#)

Self-aligning source, drab

A copolymer comprising an oxygenated polyaromatic alcohol and a poly (alkylene oxide) alkyl ether (meth)acrylate is disclosed, wherein the oxygenated polyaromatic alcohol is preferably lignin or lignin derivative. A hydrogel comprising the copolymer and a cyclic oligosaccharide such as α -cyclodextrin is also disclosed, which can be used in biomedical or personal care industries, for example as a carrier for an active agent.

US10588664B2	Subcutaneous implant delivery apparatus and method of delivering a subcutaneous implantable device for accessing a vascular site	According to embodiments of the present invention, a subcutaneous implant delivery apparatus is provided. The apparatus includes a receiving portion configured to receive a subcutaneous implantable device; and a stabilizing portion configured to cooperate with the receiving portion to hold the subcutaneous implantable device in a fixed position. The receiving portion and the stabilizing portion are movable relative to each other between a released configuration, wherein the receiving portion and the stabilizing portion are configured to move apart from each other to allow the receiving portion to be inserted under a skin layer, and a closed configuration, wherein the receiving portion and the stabilizing portion are configured to move toward each other to allow the subcutaneous implantable device to be held adjacent to the skin layer. According to further embodiments of the present invention, a method of delivering a subcutaneous implantable device for accessing a vascular site is also provided.
US10581449B2	Inverter-based resistors, analog-to-digital converters, and methods for dynamically generating resistance in a digital-only circuit	According to various embodiments, an inverter-based resistor may be provided. The inverter-based resistor may include at least one digital inverter, wherein each of the at least one digital inverter is configured to receive an input and provide an output, each of the at least one digital inverter further includes a positive voltage rail and a negative voltage rail, wherein the digital inverter input is connected to the inverter output and the positive voltage rail is connected to the negative voltage rail, and wherein a current flowing through the inverter-based resistor varies in direction and magnitude in response to a digital input provided to the positive voltage rail and the negative voltage rail.
US10578438B2	Optical gyroscope, electro-optic system, and methods of forming the same	Various embodiments may provide an optical gyroscope system and methods of forming the same.

[US10544458B2](#)

Device and method for detecting

US10485824B2	Cationic polyamines for treatment of viruses	Antiviral cationic polyamines were prepared by modifying polyethylenimines with N-acylating agents that introduce a side chain comprising one or more carbons and at least one alcohol hydroxy group. The cationic polyamines can have a linear or branched polyethylenimine backbone structure. Preferably, the cationic polyamines comprise pendant monosaccharide groups, which can be introduced via a cyclic carbonate comprising a pendant protected monosaccharide (e.g., mannose) group. The cationic polyamines can be active and selective against a broad spectrum of viruses at low concentrations, and are generally non-toxic.
US10481166B2	Microparticle fractionation	We describe a method of monitoring the state of a cell, tissue, organ or organism. The method comprises establishing, for a sample of microparticles from the cell, tissue, organ or organism, a ratio. The ratio is of a selected polypeptide in microparticles which comprise GM1 gangliosides, preferably which bind to Cholera Toxin B (CTB) ("GM1 ganglioside microparticle polypeptide") to the selected polypeptide in microparticles which comprise exposed phos—photidylserine, preferably which bind to Annexin V ("Annexin V microparticle polypeptide"). The GM1 ganglioside microparticle polypeptide to Annexin V microparticle polypeptide ratio so established may be indicative of the state of the cell, tissue, organ or organism.
US10481307B2	Optical antenna	According to embodiments of the present invention, an optical antenna is provided. The optical antenna includes at least one first particle, and at least one second particle having a diameter that is larger than a diameter of the at least one first particle, wherein the at least one first particle and the at least one second particle are arranged along a plane, and wherein the at least one first particle is configured to enhance an optical emission of

M

M

[US10463304B2](#)

US10426642B2	Membrane for covering a peripheral surface of a stent	A membrane for covering a peripheral surface of a stent is provided, the membrane including a plurality of line openings formed therein. Each line opening may be a straight line opening, for example in the form of a slit, a curved line opening, or any line opening of a suitable shape or curvature, e.g. U-shaped or V-shaped. Blood pressure opens the slits to allow blood to flow through the membrane, while curved line openings create a flap in the membrane that can open to allow blood to pass through. According to further embodiments of the present invention, a method of forming a membrane on a stent and a device for use in a blood vessel are provided.
US10428429B2	Formulation and method for inhibiting carbon-based deposits	There is a formulation and a method for inhibiting carbon-based deposits on metal substrate. The method comprises the use of a formulation comprising at least one oxidizing agent and at least one etchant capable of forming free metal ions from the metal substrate, at least one sequestering agent having a ligand capable of forming a complex with the free metal ions and at least one chelating agent having a ligand capable of complexing with at least one surface metal atom.
KR101993427B1	White blood cell specific aptamer and the use thereof	According to the present invention, an aptamer, which selectively binds to leukocytes, specifically binds to CD45 or CD66b, includes 5-20 modified bases in which a 5' position of deoxyuridine triphosphate (dUTP, deoxyuracil) is substituted with a hydrophobic functional group selected from the group consisting of a naphthyl group, a benzyl group, a pyrrolebenzyl group and tryptophan, and consists of 25-100 bases in total.
US10420830B2	Nanocapsules carrying chikungunya-associated peptides	The present invention refers to a composition comprising a viral protein or fragment thereof, wherein the viral protein or fragment thereof is enclosed within a self-assembling protein nanocapsule, preferably ferritin, and wherein the viral protein, or fragment thereof is selected from a virus of the Togaviridae family. The viral protein or fragment thereof may also further be selected from a virus of the alphavirus subfamily.
US10416153B2	Chemical fluorescent probes for detecting biofilms	The present invention relates to a family of fluorescent compounds based on the BODIPY scaffold, and methods for the preparation of said compounds. The present invention further relates to the use of said compounds for the detection of bacterial biofilms, wherein the bacterial biofilm comprises <i>Pseudomonas aeruginosa</i> and the compound specifically binds to a Fap protein of <i>Pseudomonas aeruginosa</i> , or wherein the compound specifically binds to bacterial cells that contain high levels of cyclic-di-guanosine-monophosphate (c-di-GMP).
US10414794B2	Method of purifying an antibody	Provided herein is a novel method of purifying an IgG antibody from a preparation by use of an electropositive membrane having a defined porosity.
US10408775B2	Sensor arrangements and methods of operating a sensor arrangement	According to various embodiments, there is provided a sensor arrangement including a filter configured to provide an output signal having an output wavelength, the output wavelength having a dependence on a temperature of the filter; $\lambda_{\text{output}} = \lambda_0 + \alpha(T - T_0)$

US10350172B2	Stimuli-responsive i complex coated holl vesicles	A porous hollow silica particle with an interpolymer complex immobilized thereon is provided. The interpolymer complex comprises a first polymer immobilized to a surface of the silica particle, and a second polymer complexed with the first polymer. Pharmaceutical compositions comprising the silica particle, and methods of forming the silica particle are also provided.
US10351827B2	Method for different pluripotent stem cell proximal tubular cell	There is provided a method of differentiating an induced pluripotent stem cell (iPSC) into a renal proximal tubular cell (PTC)-like cell. The method comprises culturing an undifferentiated iPSC in a renal epithelial cell culture medium in the presence of one or more extracellular matrix (ECM) molecules, bone morphogenic protein 2 (BMP2) and bone morphogenic protein 7 (BMP7), for a period of from about 8 to about 10 days, under conditions sufficient to induce differentiation of the iPSC into a PTC-like cell. A cell population of differentiated PTC-like cells is also provided, as well as uses and methods of use of the cell population.
US10349910B2	Method and apparat assessing blood ves	A method for assessing blood vessel stenosis using image data of a subject is disclosed. The image data represents a vascular structure of the subject. The method comprises: (a) segmenting, from the image data, a vessel segment representing a segment of a blood vessel, (b) obtaining, using the image data, a plurality of two-dimensional images of the vessel segment; said plurality of two-dimensional images representing respective cross-sections of the vessel segment, (c) identifying, for each of the plurality of two-dimensional images, a lumen area comprising lumen pixels representing a lumen of the corresponding cross-section, (d) obtaining a quantitative measure using the lumen areas of successive cross-sections of the vessel segment, and (e) assessing blood vessel stenosis using the quantitative measure. A computer system for performing the above method is disclosed.
US10353787B2	Data stripping, alloc reconstruction	A method for data stripping, allocation and reconstruction in an active drive storage system including a plurality of active object storage devices, each of the plurality of active object storage devices including one or more storage devices and a controller is provided. The method includes the controller of the identified one of the plurality of active object storage devices segmenting the received data into a plurality of data chunks and generating one or more parity chunks in response to the plurality of data chunks. The method further includes the controller of the identified one of the plurality of active object storage devices reorganizing the plurality of data chunks and the one or more parity chunks in response to a number of

[US10311744B2](#)

Autodidactic cognitive training
device and method thereof

A cognitive training method has a step of obtaining sensor data of a subject during a memory exercise which in turn determines whether the sensor

US10230532B2	Entity authentication in network	There is provided an entity authentication method for a network including a first entity and a second entity, the method including: selecting, at the first entity, one or more pieces of data processed by the first entity to be used for authenticating the second entity; tagging, at the first entity, each of the one or more pieces of data selected with a respective tag generated based on a first secret key of the first entity; sending, from the first entity, a set of authentication data comprising the one or more pieces of data and the respective tags to the second entity; and authenticating, by the first entity, the second entity using a challenge-response authentication technique based on the set of authentication data and the first secret key. There is also provided a corresponding system with entity authentication for a network, and an entity in a network with entity authentication.
US10228400B2	Electric meter, an electric meter system and a method of providing branch-level readings for a power distribution network	According to various embodiments, there is provided an electric meter including a sensor circuit configured to provide a plurality of instantaneous magnetic field measurements; a processing circuit configured to generate a time-series of magnetic field vectors, each magnetic field vector of the time-series of magnetic field vectors including the plurality of instantaneous magnetic field measurements; and a total current determination circuit configured to determine a total current, wherein the total current is a sum of currents of each branch of a plurality of branches of a power distribution network; wherein the processing circuit is further configured to compute a de-mixing matrix based on the determined total current and the time-series of magnetic field vectors, and further configured to linear transform each magnetic field vector using the de-mixing matrix to determine a current of each branch.
US10221253B2	Phase separated composite	A composite is disclosed. The composite comprises a first conjugate of a polymer and a first phenol-containing moiety, and a second conjugate of a gelatin or collagen and a second phenol-containing moiety, wherein the polymer is selected so that the first conjugate is less cell-adhesive than the second conjugate, at least one of the first and second conjugates is crosslinked to form a matrix, and the composite comprises discrete regions that are rich in one of said first and second conjugates. A method of forming such composite is also disclosed. The method comprises mixing precursors for the first and second conjugates in a solution for forming said composite, and dispersing a catalyst in the solution to catalyze crosslinking of at least one of the first and second conjugates to form the matrix. The composite may be used to grow cells.
US10215692B2	Optical waveguide structure and optical gas sensor, and methods of fabrication thereof	There is provided an optical waveguide structure, including a substrate, an insulating layer disposed on the substrate whereby the insulating layer includes an air slot formed therein, a first material layer suspended over the air slot whereby the first material layer constitutes a waveguide core of the optical waveguide structure, and a second material layer disposed over the waveguide core whereby the waveguide core is suspended over the air slot by the second material layer. There is also provided an optical gas sensor incorporating the optical waveguide structure and methods of fabrication thereof.
US10214776B2	Nanoprobe-based genetic testing	The present application relates to methods of detecting a mutation in a target nucleic acid molecule. Two phosphorodiamidate morpholino oligomer probes that differ by at least one base are each covalently coupled to a nano article and hybridized to a target sequence. The melting temperature of the complexes between each of the two probes and the target nucleic acid are measured and compared to determine whether the sample contains a nucleic acid with the mutation. Further, the present invention relates to kits comprising a first and second conjugate as described herein and to the use of such kits for the detection of mutations in a target nucleic acid molecule or for assigning a genotype to a target nucleic acid molecule.
US10215702B2	Method for preparing a surface enhanced Raman spectroscopy particle	There is provided a method of preparing a surface enhanced Raman spectroscopy (SERS) particle comprising the step of encapsulating a plurality of Raman molecules on the surface of a metallic core with a biocompatible protective shell at an elevated temperature selected to decrease the encapsulation time by more than one-fold relative to an encapsulation performed at 20° C
US10211805B2	Micro-electromechanical resonators and methods of providing a reference frequency	According to various embodiments, there is provided a micro-electromechanical resonator, including a substrate with a cavity therein; and a resonating structure suspended over the cavity, the resonating structure having a first end anchored to the substrate, wherein the resonating structure is configured to flex in a flexural mode along a width direction of the resonating structure, wherein the width direction is defined at least substantially perpendicular to a length direction of the resonating structure, wherein the length direction is defined from the first end to a second end of the resonating structure, wherein the second end opposes the first end.
US10204708B2	System and method for deriving parameters for homeostatic feedback control of an individual	A method and system of deriving a physiological homeostatic operating set point of an individual comprising the steps of: obtaining a dataset of predetermined number of homeostatic measurements of the individual; fitting the dataset of predetermined number of homeostatic measurements according to a negative exponential decay function; identifying and setting the physiological homeostatic operating set point unique to the individual as the point corresponding to the point of maximum curvature on the fitted negative exponential decay function is disclosed. The method is especially suited for determining the [FT4]-[TSH] set point, which is unique for each individual.
US10195595B2	Catalyst composition and process for producing aromatic hydrocarbon using the catalyst composition	It is an object of the present invention to provide a catalyst that is excellent in stability even at a high catalyst-regeneration temperature. It is another object of the present invention to provide a process for producing an aromatic hydrocarbon from a lower hydrocarbon by using the above catalyst. The catalyst composition comprises molybdenum, a second metal that is not molybdenum, and a crystalline metallocosilicate, wherein the content of molybdenum is 1 to 20% by weight in terms of a molybdenum atom, and the content of the second metal is 2 to 20% by weight in terms of a metal atom.
US10195593B2	Method for preparing a sodium faujasite catalyst and its use in producing acrylic acid	The invention relates generally to a sodium faujasite catalyst, and in particular the use of the sodium faujasite catalyst in

[US10193532B2](#)

Method of operating a finite impulse response filter

According to one aspect of the invention, there is provided a method of operating a finite impulse response filter comprising an input; an output; and a plurality of storage elements, each coupled to the input via

US10170693B2	Magnetoresistive device and method of forming the same	According to embodiments of the present invention, a magnetoresistive device is provided. The magnetoresistive device includes a free magnetic layer structure having a variable magnetization orientation, a fixed magnetic layer structure having a fixed magnetization orientation, and a tilting magnetic layer structure configured to provide an interlayer exchange biasing field to tilt, at equilibrium, the fixed magnetization orientation or the variable magnetization orientation relative to the other to be along a tilting axis that is at least substantially non-parallel to at least one of a first easy axis of the fixed magnetization orientation or a second easy axis of the variable magnetization orientation. According to further embodiments of the present invention, a method of forming a magnetoresistive device is also provided.
US10167267B2	Conversion and purification of biomass	The present invention relates to a method for synthesizing an optionally substituted furoic acid by dehydrating a biomass and oxidizing the optionally substituted furan derived from the dehydration reaction. Water extraction has been incorporated as a step between the dehydration and the oxidation in order to purify the intermediate optionally substituted furan before having it oxidized. Prior to this water extraction, the organic solvent used for dehydration may be separated by evaporation. The provision of the water extraction allows impurities to be separated from the intermediate optionally substituted furan.
US10160784B2	Antibody purification process	A method of purifying a target antibody includes contacting a cell culture harvest or a protein preparation including at least one target antibody with a least one fatty acid having 7 to 10 carbon atoms to form a mixture, contacting this mixture with allantoin, and then separating solid materials to provide a solution comprising the target antibody. Solid materials can be removed by filtration, sedimentation or centrifugation, and the fatty acids can be enanthic, caprylic, pelargonic, nonenoic or capric acid. The invention is also directed to kits used to facilitate this method of antibody purification.
US10156532B2	System and method for detecting a defective sample	In various embodiments, a system for detecting a defective sample may be provided. The system may include a chamber. The system may further include a pressure reducing mechanism coupled with the chamber. The system may additionally include a detector. The pressure reducing mechanism may be configured to reduce a pressure in the chamber. The detector may be configured to detect information indicating a temperature of the sample. Various embodiments may be capable of detecting water ingress or fluid ingress into the micro cracks or along the designed discontinuities, like bolts and rivets.
US10151863B2	Optical grating	According to one aspect of the invention, there is provided an optical grating comprising a substrate comprising a plurality of protrusions with a space in between any two adjacent protrusions; and a cap provided on at least one of the plurality of protrusions at an end that is furthest from the substrate, wherein the cap has a higher degree of optical attenuation compared to the substrate material and wherein the combination of each protrusion and the respective cap thereon has a generally symmetric cross-sectional profile.
US10151638B2	Bolometer, method of fabricating the same, and bolometric method	Various aspects of this disclosure provide a bolometer including a substrate and a ring resonator structure over the substrate. The bolometer may also include a silicon oxide layer in thermal contact with the ring resonator structure. The bolometer may further include a first waveguide over the substrate and coupled to the ring resonator structure, the first waveguide configured to couple an infrared light to the ring resonator structure so that the infrared light generates a temperature increase in the silicon oxide layer. The bolometer may additionally include a second waveguide over the substrate and coupled to the ring resonator structure, the second waveguide configured to couple a probe light input to the ring resonator structure so that a probe light output is generated from the probe light input, the probe light output having a change in a characteristic from the probe light input based on the temperature increase.
US10145669B2	Reducing speckle noise in optical coherence tomography images	A method and system are proposed to obtain a reduced speckle noise image of a subject from optical coherence tomography (OCT) image data of the subject. The cross sectional images each comprise a plurality of scan lines obtained by measuring the time delay of light reflected, in a depth direction, from optical interfaces within the subject. The method comprises two aligning steps. First the cross sectional images are aligned, then image patches of the aligned cross sectional images are aligned to form a set of aligned patches. An image matrix is then formed from the aligned patches; and matrix completion is applied to the image matrix to obtain a reduced speckle noise image of the subject.
US10141837B2	Device and method for energy harvesting using a self-oscillating power-on-reset start-up circuit with auto-disabling function	Device and method for energy harvesting using a self-oscillating power-on reset start-up circuit. The device for energy harvesting comprises a start-up circuit for generating self-oscillation and initial boosting of an input voltage from an energy source during a start-up phase; a main boost circuit for boosting the input voltage during a steady state phase; a clock generator circuit for generating clock signals which control voltage boosting of the main boost circuit during the steady state phase; and a switching circuit coupled to the start-up circuit, the main boost circuit and the clock generator circuit for switching powering of the clock generator circuit between the start-up circuit and the main boost circuit such that the clock generator circuit is powered by only one of the start-up circuit and the main boost circuit at any point in time.
US10134607B2	Method for low temperature bonding of wafers	A method for bonding wafers is provided. The method comprises the steps of providing a first wafer having an exposed first layer, the first layer comprising a first metal; and providing a second wafer having an exposed second layer, the second layer comprising a second metal, the first metal and the second metal capable of forming a eutectic mixture having a eutectic melting temperature. The method further comprises the steps of contacting the first layer with the second layer; and applying a predetermined pressure at a predetermined temperature to form a solid-state diffusion bond between the first layer and the second layer, wherein the predetermined temperature is below the eutectic melting temperature.

US10128503B2	Conductive fibrous materials	There is provided a conductive fibrous material comprising a plurality of carbonaceous fibers, wherein each carbonaceous fiber is fused to at least one other fiber. The carbonaceous fibers may be fused at fiber-to-fiber contact points by a polymer. The process of making the conductive fibrous material comprises mixing a phenolic polymer with a second polymer to form a polymer solution, preparing phenolic fibers having nano- or micro-scale diameters by electrospinning the polymer solution, and subsequent carbonization of the obtained phenolic fibers, thereby generating carbonaceous fibers, wherein each carbonaceous fiber is fused to at least one other fiber. The conductive fibrous material may be useful in electrode materials for energy storage devices.
US10127114B2	Method of file system design and failure recovery with non-volatile memory	A method of rebooting a file system using a non-volatile memory is provided. The method comprising persistently storing critical information in the non-volatile memory, the critical information indicating a stat

[US10105454B2](#)

Ultrashort peptides as exogenous
second harmonic probes for
bioimaging applications

Various aspects of the present invention relate to a peptide based biomaterial for visualization by SHG microscopy. In particular the invention relates to the use of short peptides as a non-linear optical (NLO) material for second harmonic generation (SHG) microscopy. A preferred short peptide comprises LIVAGK (LK6) and contains a non-polar aliphatic tail

[US10076772B2](#)

Transducer and method for forming
the same

A transducer is provided, which includes a substrate, wherein a cavity is defined at least partially through the substrate, at least one stopper structure arranged within the cavity, a support layer arranged over the at least one stopper structure and the cavity to seal the cavity, and a piezoelectric functional arrangement arranged on the support layer. According to further embodiments of the present invention, a method for forming a transducer is also provided.

[US10035990B2](#)

Specific internalization of
nanoparticles into protein cages

The invention relates to a method to encapsulate nanoparticles into a protein cage by inserting the nanoparticles into the core through holes. Currently commercially available nanoparticles can be functionalized using the inventive method. The inventive hybrids have applications in biosensing and bioimaging. The use of an affinity between poly-histidine chains and nitrilotriacetic acid as chelating reagent to obtain the inventive cages and hybrid assemblies by the method according to the invention is shown in FIG. 1.

[US9987369B2](#)

Vitamin functionalized gel-forming block copolymers for biomedical applications

Gel-forming block copolymers were prepared comprising i) a central hydrophilic block consisting essentially of a divalent poly(ethylene oxide) chain and ii) two peripheral monocarbonate or polycarbonate hydrophobic blocks linked to the central block by linking groups bearing one or more hydrogen bond forming *—N(H)—* groups. The hydrophobic blocks comprise one or more vitamin-bearing subunits. The gel-forming block copolymers can be used to prepare various biodegradable and/or biocompatible hydrogel and organogel drug compositions, in particular antimicrobial and/or anti-tumor drug compositions. The hydrogel compositions have utility in depot injections for drug delivery. The hydrogen bonding *—N(H)—* group(s) provide longer in vivo lifetime of the hydrogel before degradation and a more prolonged and controlled release rate of a hydrophobic drug compared to similar hydrogels prepared from poly(ethylene glycol).

[US9981964B2](#)

Maleimide derivatives as modulators of wnt pathway

The present invention relates to compounds of formula (I), combinations thereof, pharmaceutical compositions, and methods of use thereof for the treatment of cancer, in particular for the treatment of colorectal cancer, and for the treatment of other diseases, such as inflammatory diseases, autoimmune diseases, and neurodegenerative diseases.

[US9963682B2](#)

Nuclear receptor and mutant thereof

US9935355B2	THz photomixer emitter and method	A THz photomixer emitter is disclosed. The emitter comprises a photoconductive material, an antenna structure, and an electrode array. The electrode array is disposed such that an electric field associated with photocarriers generated in the photoconductive material is coupled to the antenna for emission of a THz wave via the antenna structure. The electrode array is configured such that an electric field resonance pattern of the electrode array is substantially aligned with an emission field pattern of the antenna structure
US9933390B2	Devices for extracting at least one analyte	A device for extracting at least one analyte may include: a sample reservoir configured to contain a sample comprising at least one target analyte and interfering materials; at least one extraction chamber connected to the sample reservoir; at least one porous structure lining one or more sides of the at least one extraction chamber; and a voltage source configured to provide a first voltage and a second voltage, wherein, when the first voltage is provided, the at least one target analyte and the interfering materials move towards the at least one extraction chamber or to a predetermined area from the at least one extraction chamber, wherein, when the second voltage is provided, the interfering materials pass through and exit the at least one extraction chamber, and the at least one target analyte is stopped from exiting the at least one extraction chamber by means of the at least one porous structure.
US9932454B2	Porous polymer material	The present disclosure relates to a polymer material comprising mesopores extending between melamine-formaldehyde co-polymer nano-particles and wherein micropores extend within the co-polymer nano-particles, methods of producing the same and uses thereof
US9927427B2	Exosome recovery methods with low molecular weight organic zwitterions	A method of isolating exosomes includes conducting at least one purification step in the presence of an organic zwitterion having a molecular weight of less than about 350 Daltons, a buffering pK of a negatively charged portion of the organic zwitterion is at least one full pH unit below an operating pH at which the at least one purification step is conducted, and a buffering pK of the positively charged portion of the organic zwitterion is at least one full pH unit above the operating pH.
US9915670B2	Method of detecting hydrogen peroxide	A method of detecting one or more analytes comprising or consisting of hydrogen peroxide using surface enhanced Raman spectroscopy (SERS) is provided. The method includes providing a SERS-active substrate having at least one metal carbonyl cluster compound attached thereon; contacting one or more analytes with the SERS-active substrate; and detecting changes in surface enhanced Raman signal from the at least one metal carbonyl cluster compound as an indication of the presence of one or more analytes comprising or consisting of hydrogen peroxide.
US9909203B2	Nano-aperture fabrication using template guided thermal dewetting	A method for fabrication of metal film with nanoapertures is provided. The method includes the steps of providing a nanopatterned template including a plurality of nanostructures, depositing of the metal film onto the nanopatterned template, and thermally induced dewetting of the metal film to define the nanoap

US9897561B2	Method of detecting defects in an object based on active thermography and a system thereof	There is provided a method of detecting defects in an object based on active thermography, the method including heating a surface of the object at a plurality of localized regions thereof, selecting at least one of the localized regions as a reference region, selecting at least another one of the localized regions as a comparison region, comparing a thermal response at the comparison region to a thermal response at the reference region due to the heating, and determining whether the object has a defect based on the comparison. There is also provided a corresponding system for detecting defects in an object.
US9896741B2	Method of producing metal carbonate from an ultramafic rock material	A method of producing a metal carbonate from an ultramafic rock material is provided. The method includes providing an ultramafic rock material comprising a metal silicate; reacting the ultramafic rock material with an acid to form a mixture comprising a salt of the metal; contacting the mixture comprising a salt of the metal with oxygen so as to aerate impurities in the mixture and/or to remove residual acid from the mixture; heating the resultant mixture to decompose the salt of the metal to form metal oxide; and reacting the metal oxide with aqueous ammonium carbonate to obtain the metal carbonate. A system for producing a metal carbonate from ultramafic rock material is also provided.
US9890376B2	Chromatographic purification of polynucleotides with negatively charged particles	A method of purifying a sample that includes a polynucleotide includes the steps of (i) providing a packed chromatographic column having negatively charged porous particles, (ii) equilibrating the column to the conditions to which the polynucleotide in the sample is to elute, (iii) contacting the sample with the packed chromatographic column such that the sample volume applied to the packed chromatographic column is less than or equal to the interparticle space of the negatively charged porous particles within the packed chromatographic column, (iv) eluting the polynucleotide from the packed chromatographic column, where the polynucleotide is in a purer state and in the conditions to which the packed chromatographic column was equilibrated.
US9890205B2	Chromatographic purification of immunoglobulin G preparations with particles having multimodal functionalities	A method of purifying a sample containing a desired protein includes the steps of (i) providing a packed chromatographic column having positively charged porous particles, (ii) equilibrating the column to the conditions to which the desired protein in the sample is to elute, (iii) contacting the sample with the packed chromatographic column such that the sample volume applied to the packed chromatographic column is less than or equal to the interparticle space of the positively charged porous particles within the packed chromatographic column, (iv) eluting the desired protein from the packed chromatographic column, where the desired protein is in a purer state and in the conditions to which the packed chromatographic column was equilibrated; where the desired protein is an antibody, an antibody fragment, an antibody derivative, or an antibody fusion protein.
US9889180B2	Method of treating cancer	The present invention relates to a pharmaceutical composition comprising a histone-lysine N-methyltransferase EZH2 (enhancer of zeste homolog 2) inhibitor and an enhancer of interferon-gamma receptor activity. The invention also relates to method of treating a patient having cancer, comprising administration of the pharmaceutical composition.
US9879059B2	Tailoring multivalent interactions of biopolymers with a polyproline scaffold	A glycopeptide, comprising a polyproline backbone and one or more carbohydrate molecules.
SG11201710515SA	A modified layered clay material and composites containing the same	There is provided modified layered clay material comprising a layered clay material modified by a functionalized silsesquioxane having a functional group with at least two conjugated amine groups. There is also provided a composite containing the modified layered clay material, a method for forming the modified layered clay material and a method for forming the composite
US9863956B2	Differentiation of isobaric amino acids and other species	Techniques for differentiating isobaric species are described. An isobaric species may be substituted with a tagging species identified using mass spectrometry. The isobaric species may be a subunit of a first polymer having a defined sequence, e.g., the isobaric species may be an amino acid in a protein or a peptide sequence. A tagging species may be substituted for the isobaric species in a second polymer having an otherwise identical sequence as the first polymer. The second polymer may have the same number of sequences as the first polymer, and substantially the same sequence of subunits, with a few exceptions such as the tagging species for the isobaric species. The first polymer and the second polymer may be prepared in the same reaction vessel. A polymer/protein of defined subunit sequence containing an isobaric species or a tagging species may be analyzed by mass spectrometry to determine the sequence.
US9863937B2	Fluorescent molecular rotors	The present invention relates to methods and compositions for detecting an interaction between a protein and a ligand, comprising: (i) binding at least one fluorescent molecular rotor to said ligand or protein; and (ii) detecting a change in fluorescence emitted by said fluorescent molecular rotor after contact of the bound fluorescent molecular rotor with the other of said ligand or protein, thereby detecting an interaction between the ligand and the protein, wherein the fluorescent molecular rotor comprises: a rotating π -bond; an electron-donating moiety; an electron-accepting moiety; and a π conjugated linker.
US9858678B2	Method and system for human motion recognition	A system and method for human motion recognition au other of R avaf ! M

US9854538B2	Base station, user terminals and wireless communication method	The objective of the invention is to suppress, in a case of applying the RRH system in an environment having a plurality of cells (multi-cellular environment), the reduction of the throughput of the whole system. A base station, in the RRH system in which a plurality of antenna ports are dispersively placed in each of a plurality of cells, comprises: a selection unit that selects antenna ports, to which user terminals are to connect, from among the antenna ports of the cells in which the user terminals are existent; and a power setting unit that controls the transmission powers of the antenna ports. The selection unit and power setting unit set predetermined conditions for the target SINRs(t) of the user terminals and the transmission powers of the antenna ports, and select the antenna ports for the user terminals and control the transmission powers of the antenna ports such that the smallest one of the values of the SINRs of the user terminals of the plurality of cells is maximized.
US9851288B2	Event-driven coulter counter IC for high throughput particle counting	A particle occurrence sensing circuit for microfluidic particle sensing includes a set of particle event indicators, each of which includes: a Coulter counter having a sensing electrode exposable to a fluid within a microfluidic channel and configured for providing a particle sensing signal; an input stage configured for providing an extracted particle sensing signal; and a particle event detector configured for providing a set of particle event occurrence signals. Each of the set of particle event occurrence signals indicates a sensed occurrence of a particle greater than or equal to a given reference particle size during fluid flow through the microfluidic channel to which the sensing electrode is exposed. The particle event detector includes a successive approximation (SA) analog-to-digital converter (ADC) configured for generating a plurality of reference particle size threshold values and successively comparing the extracted particle sensing signal amplitude with reference particle size threshold values.
US9845493B2	Tunable fluorescence using cleavable linkers	The invention relates to cleavable chemistry in general, and in particular, to tunable fluorescence using cleavable linkers present in fluorochrome-quencher conjugates.
CN206731337U	Burden flow resistance oscillator	The utility model discloses a burden flow resistance oscillator, a burden flow resistance oscillator include entry, export, cavity, the entry is located the upper end of cavity, the export is located the lower extreme of cavity, be equipped with the elastic construction in the middl

[US9802872B2](#)

Methanation catalyst

The invention relates to use of a catalyst comprising particles of nickel dispersed in a porous silica matrix for catalyzing a methanation reaction. There is also described a method for methanation of a feedstock at least comprising gases carbon monoxide and h

US9746877B2	Detecting and correcting an error in a digital circuit	A method for detecting and correcting an error in a circuit is provided. The circuit is configured to receive an input signal and clock the input signal with a rising and falling timing signal. The method includes detecting late arrival signal transition of the input signal, at an intermediate point of a path, the path being one through which the input signal transits. The method further includes predicting an error in the input signal in response to detecting the late arrival signal transition at the intermediate point of the path. In addition, the method includes correcting the error in the input signal by manipulating the timing signal and/or a supply voltage.
US9738704B2	Binding molecules against Chikungunya virus and uses thereof	The invention relates to binding molecules against Chikungunya virus, which are able of neutralizing Chikungunya virus infectivity, and which can be used with therapeutic, diagnosis or research purposes, as well as to a pharmaceutical composition comprising said binding molecules.
US9734954B2	Conducting polymer/graphene-	

[US9707563B2](#)

Reagent fluid dispensing device, According to various embodiments, a reagent fluid dispensing device may be provided. The reagent fluid dispensing device may include a chamber and method of dispensing a reagent for receiving a reagent fluid, the chamber having a first opening and a second fluid

[US9672226B2](#)

Method to identify an object and a system for doing the same

Various embodiments relate to a method to identify an object comprising: receiving an image, the image having an object in front of a background; segmenting the image into a segmented image using a segmentation technique, the segmented image having a foreground component showing at least a part of the object and a background component showing at least a part of the background; determining at least one property of the foreground component of the segmented image; and matching the at least one property of the foreground component with a database of identified objects having the corresponding at least one property to identify the object.

[US9670462B2](#)

Bioactive surface for hepatocyte-

US9636639B2	Porous metallic membrane	The present disclosure relates to a method of forming a metallic layer having pores extending therethrough, the method comprising the steps of: (a) contacting a cathode substrate with an electrolyte solution comprising at least one cation; reducing the cation to deposit the metallic layer on a surface of the cathode substrate; and (c) generating a plurality of non-conductive regions on the cathode substrate surface during reducing step (b); wherein the deposition of the metallic layer is substantially prevented on the non-conductive regions on the cathode substrate surface to thereby form pores extending through the deposited metallic layer. The present disclosure further provides a metallic porous membrane fabricated by the disclosed process.
US9637592B2	Vitamin functionalized gel-forming block copolymers for biomedical applications	Gel-forming block copolymers were prepared comprising i) a central hydrophilic block consisting essentially of a divalent poly(ethylene oxide) chain and ii) two peripheral monocarbonate or polycarbonate hydrophobic blocks. The hydrophobic blocks comprise one or more vitamin-bearing subunits. The vitamin-bearing subunits comprise a carbonate backbone portion and a side chain comprising a covalently bound form of a vitamin. The gel-forming block copolymers can be used to prepare various biodegradable and/or biocompatible hydrogel and organogel drug compositions, in particular antimicrobial and/or anti-tumor drug compositions. The hydrogel compositions can be suitable for depot injections. Synergistic enhancement of toxicity to microbes was observed with compositions comprising an antimicrobial cationic polymer and an antimicrobial compound.
US9631050B2	Antimicrobial cationic polycarbonates	Antimicrobial cationic polymers having one or two cationic polycarbonate chains were prepared by organocatalyzed ring opening polymerization. One antimicrobial cationic polymer has a polymer chain consisting essentially of cationic carbonate repeat units linked to one or two end groups. The end groups can comprise a covalently bound form of biologically active compound such as cholesterol. Other antimicrobial cationic polymers have a random copolycarbonate chain comprising a minor mole fraction of hydrophobic repeat units bearing a covalently bound form of a vitamin E and/or vitamin D2. The cationic polymers exhibit high activity and selectivity against Gram-negative and Gram-positive microbes and fungi.
US9633685B2	Method of writing to an optical data storage medium, method of reading from an optical data storage medium, and optical data storage medium	According to embodiments of the present invention, a method of writing to an optical data storage medium is provided. The method includes receiving a plurality of data elements, each data element having one of a plurality of values, wherein each value of the plurality of values is associated with a wavelength, and forming, for each data element, a nanostructure arrangement on the optical data storage medium, the nanostructure arrangement configured to reflect light of the wa

US9586878B2	Method for synthesizing a sugar alcohol	A method for synthesizing a sugar alcohol comprising the step of hydrolyzing a polysaccharide in the presence of hydrogen ions (H ⁺), an alcoholic reducing agent and a hydrogen transfer catalyst to form the sugar alcohol.
US9581807B2	Supply independent and programmable non-resonant MEMS driver	A motor driver circuit for a Micro-electro-mechanical systems (MEMS) micro-mirror device, the motor driver circuit comprising: a non-inverting buffer circuit; an inverting buffer circuit; and a scalar circuit, the scalar circuit comprising a Supply Tracked Common Mode Voltage (VCMSC) generation circuit, wherein the non-inverting buffer circuit, the inverting buffer circuit, and the scalar circuit are configured, together with the VCMSC generation circuit, to provide a common mode voltage to a motor in response to a VCMSC voltage generated by the VCMSC generation circuit, and wherein the VCMSC voltage is generated by the VCMSC generation circuit in response to a control supply voltage and a driver supply voltage provided to the VCMSC generation circuit.
US9577620B2	Printed circuit arrangement and method of forming the same	In various embodiments, a printed circuit arrangement may be provided. The printed circuit arrangement may include a processor circuit. The printed circuit arrangement may further include a printed main circuit arrangement in electrical connection with a first input node of the processor circuit. The printed main circuit arrangement may be configured to receive at least one input signal and generate a main circuit signal based on the at least one input signal after a first delay from receiving the at least one input signal. The printed circuit arrangement may further include a printed reference circuit arrangement in electrical connection with a second input node of the processor circuit. The printed reference circuit arrangement may be configured to receive a further input signal, may have a second delay and may be configured such that the second delay adapts to the first delay.
US9568466B2	In vitro assay for predicting renal proximal tubular cell toxicity	There is provided an in vitro assay for screening a test compound for toxicity in renal proximal tubular cells. The method comprises contacting a test compound with a test population of renal proximal tubular cells; and examining one or more cell morphology features, examining one or more cytoskeleton features, and/or determining cell numbers of the renal proximal tubular cells in the test population and comparing such cell morphology, arrangement of cytoskeletal components and/or cell count with the respective features of a control population. A change in one or more cell morphology features, a change in arrangement of one or more cytoskeleton features or a decrease in cell numbers of the test population relative to the control population is indicative that the test compound is toxic for renal proximal tubular cells.
US9557957B2	System and method for developing a model indicative of a subject's emotional state when listening to musical pieces	A method for deriving optimal discriminating features indicative of a subject state when the subject listens to one of a set of musical pieces, comprising a step of extracting frequency features from the subject's EEG signal when the subject is in a first subject state and a second subject state, the frequency features being extracted from more than one frequency band in one set of time segments; and identifying optimal discriminating features from the extracted frequency features, the optimal discriminating features indicative of characteristics of the EEG signal when the subject is in the first subject state and the second subject state, wherein one of the first subject state and the second subject state indicates that the subject likes a musical piece while the other state indicates that the subject does not like the musical piece.
US9548762B2	Normalization factor adaptation for LDPC decoding for hard disk drive systems	An adaptation technique for decoding low-density parity-check (LDPC) codes for hard disk drive (HDDs) systems is disclosed. The method includes be Ä / !

CN103056363B	Powder feed nozzle, assembly and method for manufacturing a laser-assisted additives	The invention provides an inner nozzle portion used for a powder feeding nozzle. The inner nozzle portion can be coaxially disposed in an outer nozzle portion of the powder feeding nozzle. The inner nozzle portion comprises an upper portion having a plurality of determined shapes disposed on a surface of the upper portion, the determined shapes being configured to operate power flows flowing through the surface of the upper portion; and a lower portion having a substantially flat cone-shaped surface so as to form a channel between the substantially flat cone-shaped surface and an inner surface of the outer nozzle portion when the inner nozzle portion is connected to the outer nozzle portion. The inner nozzle portion is communicated with the inlet of the power feeding nozzle so as to receive the power flows for flowing through the surface of the upper portion and passing through the channel and flowing to a power discharging port of the channel. The invention also provides the powder feeding nozzle of the inner nozzle portion coaxially disposed in the outer nozzle portion, and components and methods of the powder feeding nozzle for manufacturing laser assisted additive.
US9521685B2	Circuit arrangement and method of determining a priority of packet scheduling	The present invention is a circuit arrangement for a wireless cellular network. The circuit arrangement includes a determiner configured to determine a priority value of each packet of a plurality of packets based on at least a position of a video frame in a group of pictures and a type of the video frame, the video frame or a part thereof being contained in the packet, wherein the type of video frame comprises I frame data or P frame data; and wherein the determiner is further configured to set the priority value of a packet including I frame data lower than the priority value of at least one other packet including P frame data; and a controller configured to control scheduling of the packet based on the determined priority value for a communication device in a wireless cellular network. A method of determining a priority of packet scheduling is also disclosed.
US9517252B2	P53 activating peptides	The present invention is directed to p53 activating peptides. The present further describes methods for generating these peptides and the use of these peptides.
US9513294B2	Megastokes amino-triazolyl-BODIPY compounds and applications to live neuron staining and human serum albumin FA1 drug site probing	A library of novel amino-triazolyl-BODIPY compounds is described. Particular compounds of the library serve as selective fluorescent probes for human serum albumin (HSA) and for live primary neurons. The fluorescent probe for HSA binds uniquely and specifically to the fatty acid site 1 of HSA, and thus proves a valuable and unique probe for drugs that bind to such a site on HSA. Methods of synthesis for the library compounds are also described.
US9506110B2	Processing of amplified DNA fragments for sequencing	A processing method to trim ends of DNA fragments, exposing the internal DNA part to give original DNA sequence information enabling application of next generation sequencing for DNA samples to be amplified by DOP-PCR or other primer dependent amplification methods. Specifically, nucleic acids are amplified using primers comprising a recognition site for a restriction enzyme, for example BpmI or Mmell. Primer sequences are removed by cleavage with the restriction enzyme.
US9508140B2	Quantifying curvature of biological structures from imaging data	A method and system are proposed to obtain quantitative data about the shape of a biological structure, and especially a heart ventricle. A set of three-dimensional input meshes are generated from MRI data. They represent the shape of a ventricle at successive times. The input meshes are used to generate a set of three-dimensional morphed meshes which have the same number of vertices as each other, and have respective shapes which are the shapes of corresponding ones of the input meshes. Then, for each of the times, shape analysis is performed to obtain a curvedness value at each of a plurality of corresponding locations in the morphed meshes. The curvedness value may be used to obtain a curvedness rate at each of the locations, indicative of the rate of change of curvedness with time at each of the locations.
US9510121B2	Transducer and method of controlling the same	According to embodiments of the present invention, a transducer is provided. The transducer includes a substrate, and a diaphragm suspended from the substrate, wherein the diaphragm is displaceable in response to an acoustic signal impinging on the diaphragm, wherein the transducer is configured, in a first mode of operation, to determine a direction of the acoustic signal based on a first displacement of the diaphragm in the first mode of operation, and to decide to accept or reject the acoustic signal based on at least one predetermined parameter and the determined direction of the acoustic signal, and in a second mode of operation, to sense the acoustic signal based on a second displacement of the diaphragm in the second mode of operation if the acoustic signal is accepted in the first mode of operation.
US9505612B2	Method for thin film encapsulation (TFE) of a microelectromechanical system (MEMS) device and the MEMS device encapsulated thereof	A method for thin film encapsulation (TFE) of a microelectromechanical system (MEMS) device, including providing a substrate; forming a MEMS device on the substrate; forming one or more etching channels adjacent to the MEMS device; providing one or more cavities below the MEMS device; and forming one or more cavities above the MEMS device.
US9499601B2	Molecular probe for sphingolipids	There is presently provided a probe comprising an isolated sphingolipid binding domain (SBD) polypeptide, wherein the isolated SBD polypeptide is capable of binding to a sphingolipid, and methods and uses relating to such a probe.
US9492952B2	Super-hydrophilic structures	A polydioxanone film comprising substantially cylindrical polydioxanone pillars on at least one side thereof, said pillars having diameters from about 0.2 μm to about 3 μm , and heights heights i

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US9494562B2	Method and apparatus for defect detection in composite structures	Methods and apparatus for non-destructive testing of a composite structure utilizing sonic or ultrasonic waves. In response to a wideband chirp wave sonic excitation signal transmitted from a probe to the composite structure, a probe signal received is correlated with a library of predetermined probe signals and a graphical representation of defects detected is generated. The graphical representation provides detailed information on defect type, defect location and defect shape. Also contemplated is a probe for non-destructive testing of a composite structure comprising three or more transducers wherein each transducer is separately configurable as a transmitter or as a receiver; and a controller coupled to each of transducer for providing signals thereto and receiving signals therefrom, wherein the signals provided thereto include signals for configuring each transducer as either a transmitter or a receiver, and signals for providing an excitation signal from each transducer which is configured as a transmitter.
US9489950B2	Method and system for dual scoring for text-dependent speaker verification	Embodiments of systems and methods for speaker verification are provided. In various embodiments, a method includes receiving an utterance from a speaker and determining a text-independent speaker verification score and a text-dependent speaker verification score in response to the utterance. Various embodiments include a system for speaker verification, the system comprising an audio receiving device for receiving an utterance from a speaker and converting the utterance to an utterance signal, and a processor coupled to the audio receiving device for determining speaker verification in response to the utterance signal, wherein the processor determines speaker verification in response to a UBM-independent speaker-normalized score.
US9481827B2	Core-shell nanoparticle and method of generating an optical signal using the same	A core-shell nanoparticle is provided. The core-shell nanoparticle has a core comprising a metal fluoride doped with a first sensitizer and a shell surrounding the core, wherein the shell comprises a first layer comprising the metal fluoride doped with a second sensitizer and a first activator, and a second layer comprising the metal fluoride doped with a third sensitizer and a second activator, wherein the first activator and the second activator are different, and each is independently selected from the group consisting of Tm ³⁺ , Ho ³⁺ , and combinations thereof. A method of generating an optical signal using the core-shell nanoparticle and a method of preparing the core-shell nanoparticle is also provided.
SG10201602185SA	Optical Light Source And Method Of Controlling The Same	
US9469726B2	Water soluble polycarbonates for medical applications	Water soluble biodegradable polymers were prepared by an organoacid catalyzed ring opening polymerization (ROP) of a cyclic carbonate monomer bearing an active ester side chain. The initial polymer comprising an active ester side chain was treated with an amino-alcohol, which transformed the active ester groups to N-substituted amide groups bearing mono-hydroxy alkyl groups and/or dihydroxy alkyl groups, thereby forming the water soluble polymers. The water soluble polymers " Mψ sysM rti n t]

[US9447407B2](#)

US9399044B2	Antimicrobial cationic polyamines	Antimicrobial, non-hemolytic cationic polyamines were prepared by treating partially N-acylated polyethylenimines and/or partially oxidized polyethylenimines with a protic acid. The cationic polyamines can have a linear or branched polyethylenimine backbone structure. Preferably, the cationic polyamines comprise pendant urea groups, which can be introduced via a cyclic carbonate comprising a pendant urea group. The cationic polyamines can be active against a tuberculosis mycobacterium at low concentration. The cationic polyamines are also effective against Gram-negative Escherichia coli and Pseudomonas aeruginosa, Gram-positive Staphylococcus aureus, and fungus Candida albicans in solution and in the form of a film.
SG10201509100YA	A core-shell nanoparticle and method of generating an optical signal using the same	-
US9374090B2	Circuit arrangement and method of operating the same	A circuit arrangement may be provided including a level shifting stage configured to be coupled to a first reference voltage and a second reference voltage. The circuit arrangement may also include a first input electrode in electrical connection with the level shifting stage for coupling a first input voltage and a second input electrode in electrical connection with the level shifting stage for coupling a second input voltage. The level shifting stage may be configured to generate an output voltage above a predetermined output level at the output node due to the first reference voltage when the first input voltage is in the first logic state and the second input voltage is in the second logic state. The circuit arrangement may also include a feedback circuit coupled to the output stage and the level shifting stage and a voltage stabilization circuit coupled to the level shifting stage.
US9364804B2	Microfluidic agitator devices and methods for agitation of a fluid	According to various embodiments, a microfluidic agitator device may be provided. The microfluidic agitator device may include: an air inlet; an air outlet; an elastic diaphragm provided between the air inlet and the air outlet and configured to oscillate if an airflow from the air inlet to the air outlet is provided; and a chamber coupled to the elastic diaphragm.
US9362916B2	Circuit arrangements and methods of operating the same	In various embodiments, a circuit arrangement may be provided. The circuit arrangement may include a level shifting stage configured to be coupled to a first reference voltage, the level shifting stage having an output node. The circuit arrangement may further include a first input electrode in electrical connection with the level shifting stage. The circuit arrangement may also include a second input electrode in electrical connection with the level shifting stage. The circuit arrangement may further include a load having a first end and a second end, the first end coupled to the level shifting stage and the second end for coupling to a second reference voltage. In addition, the circuit arrangement may include a bypass circuit element connected in parallel to the load. The bypass circuit element may be configured to allow current to flow through upon application of an external voltage for bypassing the load.
US9354090B2	Method of generating an optical signal using the same	the level shifting stage may be configured to generate an output voltage above a predetermined output level at the output node due to the first reference voltage when the first input voltage is in the first logic state and the second input voltage is in the second logic state. The circuit arrangement may also include a feedback circuit coupled to the output stage and the level shifting stage and a voltage stabilization circuit coupled to the level shifting stage.

[US9305372B2](#)

Method and device for image processing

Embodiments provide a method for processing a first image based on a second image, wherein each pixel in the first image has a plurality of color components and has a corresponding pixel in the second image, and wherein each valom ural

US9240690B2	Power transfer device	A power transfer device is provided. The power transfer device includes a circuit arrangement including a primary side having a primary coil; a secondary side having a secondary coil inductively coupled to the primary coil and a load transformation unit; wherein the load transformation unit includes an inductor and a capacitor; wherein the secondary coil, the inductor and the capacitor respectively includes a first terminal and a second terminal; wherein the first terminal of the secondary coil is coupled to the first terminal of the capacitor, the second terminal of the capacitor is coupled to the first terminal of the inductor, and the second terminal of the inductor is coupled to the second terminal of the secondary coil.
US9233393B2	Process for creating lithographically-defined plasmonic structures with enhanced Q factors	A method for plasmonic structure manufacture and for protecting a plasmonic nanostructure during annealing is provided. The method includes: lithographically forming a plasmonic nanostructure on a substrate; encapsulating the plasmonic nanostructure in high temperature resistant material; annealing the plasmonic nanostructure; and removing the high temperature resistant material to reveal the annealed plasmonic nanostructure.
US9237560B2	Cyclic prefix schemes	Methods and systems are proposed for transmitting data from a source (110) to a destination (130) via a relay station (120) having multiple antennae (122, 124). The relay station (120) receives from the source a message containing the data and a first cyclic prefix. It does this using each of its antennae (122, 124), so producing multiple respective received signals. In certain embodiments, the relay station (120) removes the first cyclic prefix from the received signals, replacing it with a new one. In other embodiments, the relay station (120) removes only a portion of the first cyclic prefix. In either case, the relay station (120) may apply space-time coding to generate second signals, which it transmits to the destination (130), which extracts the data. Methods are also proposed for estimating parameters of the channel, to enable the destination (130) to decode the data.
US9236078B2	Recording medium for heat-assisted-magnetic-recording (HAMR) and method for manufacturing the same	According to embodiments of the present invention, a method for manufacturing a recording medium for heat-assisted-magnetic-recording (HAMR) is provided. The method includes forming an underlayer on a substrate, the underlayer including a precursor material, epitaxially depositing an interlayer on the underlayer, forming a recording layer over the interlayer, and converting the precursor material to a converted material having a thermal conductivity that is higher than a thermal conductivity of the recording layer. According to further embodiments of the present invention, another method for manufacturing a recording medium for heat-assisted-magnetic-recording (HAMR) and a recording medium for heat-assisted-magnetic-recording (HAMR) are also provided.
US9228977B2	Contactless conductivity detector	A portable electrophoretic contactless conductivity detection (C4D) system for analysis on a microfluidic chip houses in one embodiment a fluidic compartment for receiving the microfluidic chip, and four detection electrodes: first and second emitting electrodes, and first and second receiving electrodes. The first emitting electrode and the first receiving electrode are adjacent to a first channel wall of the microfluidic chip, and the second emitting electrode and the second receiving electrode are adjacent to a second channel wall, where the second channel wall is opposite to the first channel wall. In an embodiment, the electrodes are provided as portions of a removable cartridge cell.
US9226899B2	Particulate hyaluronic acid and flavonoid formulations for cellular delivery of bioactive agents	There is presently provided a suspension of immiscible particles in a solution, wherein the particles comprise an agglomeration of a bioactive agent, for example an anti-cancer agent; and a plurality of conjugates of a hyaluronic acid and a flavonoid, for example a catechin-based flavonoid, wherein the particles are on average from about 15 nm to about 300 nm in diameter and wherein the bioactive agent is releasably retained in the particles by the flavonoid. The suspension is useful for delivery of the bioactive agent to cells, including cancer cells. There are also provided a therapeutic formulation comprising the suspension, as well as methods for using the suspension and therapeutic formulation, including for delivery of a bioactive agent to a cell and for treating a disease, including cancer.
US9220264B2	Multimeric forms of antimicrobial peptides	The invention relates to multimeric forms of antimicrobial peptides, for example, defensin peptides. The multimeric forms of defensin peptides possesses antimicrobial activity and may be formulated into antimicrobial compositions, pharmaceutical compositions, eyedrop composition, contact lens solution compositions for coating medical devices and the like. The invention also relates to the use of these multimeric forms of peptides, e.g. multimeric forms of defensin peptides for inhibiting and/or reducing the growth of microorganisms in general, including bacteria, fungi, and viruses.

SG10201501736VA	Methods for determining particle concentration in a fluid and systems therefor	-
US9172351B2	Piezoelectric resonator having electrode fingers with electrode patches	According to embodiments of the present invention, a piezoelectric resonator is provided. The piezoelectric resonator includes a piezoelectric substrate, a first electrode comprising a first plurality of electrode fingers, a second electrode comprising a second plurality of electrode fingers, wherein the first plurality of electrode fingers and the second plurality of electrode fingers are interdigitated, and wherein electrode patches are arranged along the first plurality of electrode fingers and the second plurality of electrode fingers according to a 2-dimensional lattice.
US9166568B2	Low power high resolution sensor interface	A sensor interface circuit is provided for resolving sensor signals from a plurality of sensors into a digital sensor signal. The sensor interface circuit includes a relaxation oscillator that receives and pre-processes the sensor signals to generate an analog sensor signal. The relaxation oscillator includes one or more dynamic circuits. The sensor interface circuit also includes a monitoring module for receiving the analog sensor signal and generating the digital sensor signal in response thereto. There is also provided a sensor system front-end and a relaxation oscillator.
US9155814B2	Nanostructured material formulated with bone cement for effective antibiotic delivery	This invention uses mesoporous silica nanoparticles and other nanostructured materials to formulate polyacrylate-based bone cement for achieving an enhanced and controlled elution of active ingredients such as antibiotics. This invention overcomes the limitation of low antibiotic release from

JP5773410B2	Silicon-based electro-optic device	PROBLEM TO BE SOLVED: To provide an electrode connection structure which achieves an efficient optical connection and enables both high-speed operations and a reduction in optical propagation loss in a silicon-based electro-optic device formed on an SOI substrate. SOLUTION: In the electro-optic device, a stack structure including a first silicon semiconductor layer of a first conductivity type and a second silicon semiconductor layer of a second conductivity type has a rib waveguide shape to form an optical confinement area, and a slab portion of a rib waveguide includes an area to which a metal electrode is connected. The slab portion in the area to which the metal electrode is connected is thicker than a surrounding slab portion. The area to which the metal electrode is connected is set within a range of a distance from the rib waveguide to the area to which the metal electrode is connected such that, when the distance is changed, an effective refractive index of the rib waveguide in a zeroth-order mode does not change.
US9115340B2	Microfluidic continuous flow device	A microfluidic continuous flow device comprising a channel which comprises a first and a second area wherein the first area of the channel is a compartment which is defined by partitioning elements and the second area of the channel is a space outside the compartment; wherein through passages which are formed between the partitioning elements are dimensioned such as to retain a biological material and optionally a sustained release composition which can be comprised in the compartment within the compartment; wherein the channel has a first inlet to the compartment through which biological material can be introduced into the compartment; a second inlet for introducing a cultivation medium into a space of the channel arranged outside of the compartment, and an outlet. The present invention further refers to methods of using the devices of the present invention and kits comprising the microfluidic continuous flow devices of the present invention.
US9109087B2	Low molecular weight branched polyamines for delivery of biologically active materials	A branched polyamine comprises about 8 to about 12 backbone tertiary amine groups, about 18 to about 24 backbone secondary amine groups, a positive number n' greater than 0 of backbone terminating primary amine groups, and a positive number q greater than 0 of backbone terminating carbamate groups of formula (2): wherein (n'+q) is a number equal to about 8 to about 12, the starred bond of formula (2) is linked to a backbone nitrogen of the branched polyamine, L' is a divalent linking group comprising 3 to 30 carbons, and q/(n'+q)×100% equals about 9% to about 40%
US9096952B2	Methods and compositions for polynucleotide library production, immortalization and region of interest extraction	Aspects of the present invention are drawn to methods and compositions for the genetic analysis of regions of interest (ROI) from one or more starting polynucleotide sample(s). In certain aspects, adapter tagged polynucleotide fragments from a plurality of initial polynucleotide samples are pooled, circularized and amplified to produce an immortalized library. Multiple ROI's from this immortalized library are amplified (e.g., in independent iPCR reactions) to generate amplicons, and, in some embodiments, pooled to form a pooled ROI amplicon sample. In certain embodiments, the amplicons for each ROI amplicon in the pooled ROI amplicon sample are present at known molar or mass ratios. The pooled ROI amplicon sample can be analyzed/processed as desired, e.g., sequenced using next generation sequencing technology.
US9087975B2	Resistive memory arrangement and a method of forming the same	According to embodiments of the present invention, a resistive memory arrangement is provided. The resistive memory arrangement includes a nanowire, and a resistive memory cell including a resistive layer including a resistive changing material, wherein at least a section of the resistive layer is arranged covering at least a portion of a surface of the nanowire, and a conductive layer arranged on at least a part of the resistive layer. According to further embodiments of the present invention, a method of forming a resistive memory arrangement is also provided.
US9084735B2	Self-assembling bis-urea compounds for drug delivery	Cationic, anionic, and/or zwitterionic bis-urea compounds self-assemble by non-covalent interactions in aqueous solution to form high aspect ratio nanofibers. The nanofibers reversibly bind drugs by non-covalent interactions, forming drug compositions for exhibiting sustained release of the drug.
US9083437B2	Front-end transceiver	In an embodiment, a front-end transceiver may be provided. The front-end transceiver may include a receiver path, including a first receiver frequency converter configured to convert a received signal with a receiver frequency into a first receiver intermediate signal with a first receiver intermediate frequency; and a receiver direct conversion stage coupled to the first receiver frequency converter so as to receive the first receiver intermediate signal. The front-end transceiver may further include an oscillator signal generator respectively coupled to the first receiver frequency converter and to the receiver direct conversion stage so as to provide a first oscillator signal with a first oscillator frequency to the first receiver frequency converter and a first stabilizing signal with a first stabilizing frequency to the receiver direct conversion stage; wherein the oscillator signal generator may be configured so that the first oscillator frequency of the first oscillator signal may be selected such that any integer multiple of the first oscillator frequency of the first oscillator signal may be different from any integer multiple of the receiver frequency of the received signal. The front-end transceiver may also include a transmitter path.
SG10201407256SA	Method of removing heat energy from an object	-

US9058885B2	Magnetoresistive device and a writing method for a magnetoresistive device	A magnetoresistive device including a fixed magnetic layer structure, a first free magnetic layer structure, and a second free magnetic layer structure, wherein the fixed magnetic layer structure is arranged in between the first free magnetic layer structure and the second free magnetic layer structure, wherein the magnetization orientation of the first free magnetic layer structure is variable in response to a first electrical signal of a first polarity and the magnetization orientation of the second free magnetic layer structure is at least substantially non-variable in response to the first electrical signal, and wherein the magnetization orientation of the second free magnetic layer structure is variable in response to a second electrical signal of a second polarity and the magnetization orientation of the first free magnetic layer structure is at least substantially non-variable in response to the second electrical signal, wherein the second polarity is opposite to the first polarity. The present invention refers to a method of determining protein-nucleic acid interaction. The method comprises mixing a protein with a sample comprising a nucleic acid which is suspected to interact with the protein to form a first mixture. The first mixture can be incubated to allow interaction between the protein and nucleic acid. Metallic nanoparticles are added to the first mixture to obtain a second mixture. An electrolyte is added to the first or second mixture to determine the protein-nucleic acid interaction. The present invention also refers to a kit for determining protein-nucleic acid interaction. The kit comprises a protein capable of interacting with a nucleic acid or a nucleic acid capable of interacting with a protein, and at least one type of metallic nanoparticle.
US9046528B2	Method for determining protein-nucleic acid interaction	
US9048987B2	Joint detector/ decoder devices and joint detection/ decoding methods	According to various embodiments, a joint detection/decoder device may be provided. The detector and decoder device may include: an input circuit configured to receive an input signal; a survivor splitting circuit configured to produce a plurality of survivors of a next instance based on at least one survivor of a previous instance and based on the input signal; and a survivor discarding circuit configured to discard survivors based on a set of predetermined criteria; wherein each survivor has an associated bit sequence.
SG10201502164TA	Optical Circuit For Sensing A Biological Entity In A Fluid And Method Of Configuring The Same	An optical circuit for sensing a biological entity in a fluid and a method of configuring an optical circuit for sensing a biological entity in a fluid are provided. The optical circuit includes a sensing arrangement including a reference arm having a reference waveguide and a sensing arm having a waveguide; wherein lengths of the reference waveguide and the w

[US8976901B2](#)

Phase shift keying transmitter circuit A phase shift keying transmitter circuit that includes: a variable frequency conversion stage adapted to receive a first data signal, wherein the variable frequency conversion stage comprises a plurality of frequency modulating elements, wherein the first data signal controls the number of the plurality of frequency modulating elements that are operated so as to control an operating frequency of the variable frequency conversion stage; and an output stage configured to switch between one of two possible outputs, the signals provided by one of the two possible outputs having an opposite polarity to the other, wherein the output stage is con

[US8926998B2](#)

Polycarbonates bearing pendant
primary amines for medical
applications

An antimicrobial composition comprises an anionic drug and an amine polymer comprising a first repeat unit of formula (2):

wherein a' is an integer equal to 1 or 2, b' is an integer equal to 1 or 2

US8917540B2	Memory device with soft-decision decoding	According to embodiments of the present invention, a memory device with soft decision decoding is provided. The memory device includes a memory cell configured to store an input data bit; a memory sensor configured to read out a parameter associated with a state of the memory cell; a detector configured to determine, based on the parameter read out from the memory cell, a soft information indicating the likelihood that the input data bit stored in the memory cell is a "0" or the likelihood that the input data bit stored in the memory cell is a "1"; and a decoder configured to generate a decoded bit based on the soft information. Further embodiments relate to a method of performing soft-decision decoding on a data bit stored in a memory cell of a memory device.				
US8915121B2	Encapsulated device with integrated gas permeation sensor	An encapsulated device comprising an integrated gas permeation sensor is provided, comprising a base substrate with an electronic component arranged thereon being enclosed within an encapsulation for protecting the electronic component from moisture and/or oxygen; at least one sensor is arranged within the encapsulation to measure the permeation of gas into the encapsulation; each sensor comprises an electrically conductive sensing element comprising a moisture and/or oxygen sensitive material, wherein the reaction of said material with moisture and/or oxygen results in a change in the electrical resistance/conductivity of the sensor.				
US8906678B2	Use of markers of undifferentiated pluripotent stem cell	The disclosure relates to methods of binding and identifying undifferentiated pluripotent stem cells and particularly, although not exclusively, to use of binding moieties which bind to PHB on the surface of undifferentiated pluripotent stem cells, such as PHB-binding peptides, and to methods for depleting undifferentiated stem cells from a sample.				
US8907055B2	Mutant sox proteins and methods of inducing pluripotency	There is presently provided mutant Sox2, Sox7 and Sox17 proteins that have acquired or increased ability to induce pluripotency in a partially differentiated or fully differentiated cell. Sox7 and Sox17 are mutated to resemble in part Sox2, or Sox2 is mutated to resemble in part Sox7 or Sox17. In one aspect, the Oct4 contact interface of Sox7 or Sox17 is mutated. In another aspect, the high mobility group (HMG) of Sox2 is fused to the C-terminal activation domain of Sox7 or Sox17. Methods relating to inducing pluripotency using a mutant Sox2, Sox7 or Sox17 protein are also provided.				
SG11201405715VA	Fibrous structure	A fibrous structure comprising an assembly of hair foll	M	M	S"	GM

[US8847104B2](#)

US8824759B2	Correcting axial tilt based on object positions in axial slices of three dimensional image	A computer-implemented process is provided for reorienting a three-dimensional (3D) scan image of an object. The object has a generally flat surface. The image is constructed from image data obtained during rotation of the object about a rotation axis, which intersects the plane of the flat surface at an angle. Axial slices of the scan image are obtained, each of which represents a slice of the object that is perpendicular to the rotation axis and comprises a line representing the flat surface of the object. The axial slices are shifted to align lines representing the flat surface in different axial slices, thus forming a reoriented 3D image. Alternatively, an axial tilt angle is determined from the positions of these lines and the image is rotated by the determined angle to form a reoriented 3D image.
SG2014004071A	Analyte sensor and fabrication thereof	-
US8816456B2	Magnetoresistive device and a method of forming the same	According to embodiments of the present invention, a magnetoresistive device is provided. The magnetoresistive device includes a fixed magnetic layer structure having a fixed magnetization orientation along a first easy axis, a free magnetic layer structure having a variable magnetization orientation along a second easy axis, and an offsetting magneti

[US8786484B2](#)

US8709722B2	Methods for detecting DNA-binding proteins	There is provided a method for detecting binding of a DNA-binding protein to a target recognition sequence. The method comprises mixing in a reaction buffer a first set of metal nanoparticles, a second set of metal nanoparticles and a DNA-binding protein to form a mixture, and detecting the aggregation state of the mixture of metal nanoparticles. Each set of metal nanoparticles has a conjugated double-stranded DNA molecule having a single-stranded overhang at one end. The single-stranded overhangs of each set of DNA-conjugated metal nanoparticles are complementary to each other such that annealing of the complementary overhangs results in formation of the target recognition sequence that specifically binds the DNA-binding protein. The reaction buffer comprises an ionic species in a concentration sufficient to result in aggregation of the metal nanoparticles upon annealing of the first and second single-stranded overhang.
US8711912B2	Method, device and computer readable medium for determining whether transmission signals are present in received signals	A method is provided for determining whether transmission signals are present in received signals, the method comprising: receiving a first signal via a first radio resource; receiving a second signal via a second radio resource; determining whether a first transmission signal is present in the received first signal based on the received second signal; and determining whether a second transmission signal is present in the received second signal based on the received first signal.
US8710190B2	Human embryonic stem cell methods and PODXL expression	A method of identifying an undifferentiated human embryonic stem cell in a sample which may contain such cells, the method comprising identifying the cell or cells within the sample that express podocalyxin-like protein (PODXL) on their surface. A method of isolating an undifferentiated human embryonic stem cell from a sample containing such cells, the method comprising isolating the cell or cells within the sample that express PODXL on their surface. Typically, the methods use an antibody which binds to PODXL. Undifferentiated human embryonic stem cells isolated by the method may be useful in cell therapy. Also, in particular, compositions of cells differentiated from a human embryonic stem cell but which composition has been depleted of undifferentiated human embryonic stem cells are provided which are useful in cell therapy.
US8703194B2	Stimulus-responsive biodegradable polymers and methods of preparation	There is presently provided a stimulus-responsive polymer comprising a biodegradable polymer backbone and a stimulus-responsive pendant group attached to the biodegradable polymer backbone, wherein the biodegradable polymer backbone comprises a poly(amino ester) or a poly(amido amines

[US8658099B2](#)

Integrated apparatus for conducting and monitoring chemical reactions

Apparatus for conducting and monitoring chemical reactions comprises a base and a thermal cyclor mounted on the base. A plurality of heat-conducting receptacles are mounted on the thermal cyclor and in heat-communication therewith. Each receptacle comprises an opaque body defining a bore having an open end, a first window, and a second window. A cartridge is removably mounted on the receptacles. The cartridge comprises a plurality of light-transmitting reaction vessels, and conduits connected to the reaction vessels for processing and transferring fluid. The

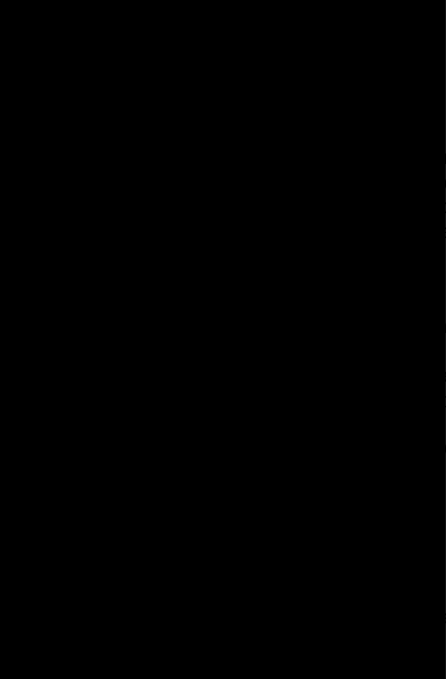
US8617879B2

US8537353B2	Sensor chip for biological and chemical sensing	A sensor chip comprising: a micro/nanofluidic channel; at least one nanostructure provided in said channel along an optical path for the transmission of a light beam; a light transparent element disposed along the optical path and arranged to allow transmission of light onto said nanostructure; and a non-transparent element surrounding at least a portion of said optical path to at least partially reduce light scatter from the optical path.
US8524174B2	Fluid cartridge, pump and fluid valve arrangement	A fluid cartridge, comprising a channel layer within which at least one circumferentially sealed fluid channel is formed, the channel layer comprising a

[US8446947B2](#)

Method for encoding a digital signal into a scalable bitstream; method for decoding a scalable bitstream

A method for encoding a digital signal into a scalable bitstream comprising quantizing the digital signal, and encoding the quantized signal to form a core-layer bitstream, performing an error mapping based on the digital signal and the core-layer bitstream to remove information that has been encoded into the core-layer bitstream, resulting in an error signal, bit-plane coding the error signal based on perceptual information of the digital signal, resulting in an enhancement-layer bitstream, wherein the perceptual information of the digital signal is determined using a perceptual model, and multiplexing the core-layer bitstream and the enhancement-layer bitstream, thereby generating the scalable bitstream. A method for decoding a scalable bitstream into a digital signal comprising de-multiplexing the scalable bitstream into a core-layer bitstream and an enhancement-layer bitstream, decoding and de-quantizing the core-layer bitstream to generate a core-layer signal, bit-plane decoding the enhancement-layer bitstream based on perceptual information of the digital signal, and performing an error mapping based on the bit-plane decoded enhancement-layer bitstream and the de-quantized core-layer signal, resulting in an reconstructed transformed signal, wherein the reconstructed transformed signal is the digital signal.



nevinylene) and
barylenevinylene) light
polymer and polymer light-
devices

The invention provides novel luminescent poly(arylenevinylene) and poly(heteroarylenevinylene) polymers. The polymers of the invention may be prepared as films and such films may be used as an emissive layer in polymeric light emitting devices. In one embodiment, a bulky aryl group is attached at position (2) of at least one phenylene ring of a poly(phenylenevinylene) backbone. In another embodiment, the bulky aryl is attached at position 3 of at least one 5-membered heteroarylene ring of a poly(heteroarylenevinylene) backbone.

able thermogelling
microcapsules for
loading of
ecules, nanoparticles and
oscale items and a
fabricating it
photovoltaic device

There is provided a polymer comprising blocks of at least one poly(ethylene glycol) block, at least one poly(propylene glycol) block and at least one poly(hydroxybutyrate) block. Also provided is a method of making the polymer and a method of using the polymer
The invention provides a microcapsule array comprising a plurality of microcapsules immobilized on a surface, optionally in microwells in said surface. Each of the microcapsules comprises an outer layer or shell defining a microcapsule interior, said outer layer having a permeability towards a nanoscale species which is dependent on an environmental condition to which said array is exposed.

ange magnetic material

The invention relates to a phase change magnetic composite material for use in an information recording medium, said material comprising a phase change material component, and a ferromagnetic material component, wherein said material exhibits both magnetic effects and phase change effects, and is usable for optical media, phase change random access memory (PCRAM) devices, magnetic random access memory (MRAM) devices, solid state memory devices, sensor devices, logical devices, cognitive devices, artificial neuron network, three level device, control device, SOC (system on chip) device, and semiconductors.

[US8323572B2](#)

Measuring device

A measuring device includes a first substrate; and a second substrate bonded on the first substrate. The second substrate has at least two inflow ports, at least two outflow ports, and an injection port. The two inflow ports, the two outflow ports, and the injection port penetrate the second substrate. The first substrate includes partition wall portions

US8259897B2	Computed tomography method and apparatus for centre-of-rotation determination	A method and apparatus is disclosed for determining the central ray of scanning an object on a detector in a computer tomography system. The method comprises producing a fan beam of x-rays at a fixed x-ray source and detecting the x-rays at the detector. The scanning projection data of the object under examination is received and the object is rotated under examination using a manipulator. After calculating the opposite projection pixel position and projection angle for each pixel, a mismatching is measured between the grey levels of all pixels and their calculated opposite projection pixels with a set of assumed central ray, and identifying the minimum of the measurement as the true central ray.
US8241850B2	Methods and compositions for isolating nucleic acid sequence variants	The invention is drawn to isolating sequence variants of a genetic locus of interest using a modified iterative primer extension method. The nucleic acids analyzed are generally single stranded and have a reference sequence which is used as a basis for performing iterative single nucleotide extension reactions from a hybridized polymerization primer. The iterative polymerization reactions are configured such that polymerization of the strand will continue if the sequence of the nucleic acid being analyzed matches the reference sequence, whereas polymerization will be terminated if the nucleic acid being analyzed does not match the reference sequence. Nucleic acid strands that have mutations can be isolated using a variety of methods and sequenced to determine the precise identity of the mutation/polymorphism. By performing the method on both strands of the nucleic acid being analyzed, virtually all possible mutations can be identified.
US8218694B2	Method for transmitting a digital signal, method for receiving a digital signal, transmitter and receiver	A transmitter (106) for transmitting a signal, the signal comprising a plurality of signal values, the signal values being grouped to at least one signal value block. The transmitter comprises a pre-transformation unit (101) adapted to process each signal value block by a pre-transformation to produce a block of modulation symbols, wherein the pre-transformation comprises a phase rotation of the signal block values, which corresponds to the multiplication of the signal value block with a phase rotation matrix. The transmitter also comprises a modulation unit (102) adapted to modulate at least one carrier signal based on the modulation symbols and a sending unit (104) adapted to send the modulated carrier signal.
US8213754B2	Optical splitter, combiner and device	An optical splitter, a combiner and a device. The optical splitter comprises a first longitudinal waveguide for receiving an incoming light wave; at least first and second pairs of output waveguides, the output waveguides of each pair being disposed on opposite sides of the first waveguide; wherein each of the output waveguides of each pair comprises a longitudinal portion disposed parallel to the first waveguide and such that optical power is coupled from the first waveguide into the respective longitudinal portions and the longitudinal portions of output waveguides of the first and second pairs are displaced along a length of the first waveguide; wherein each of the output waveguides of each pair further comprises a substantially S-shaped portion continuing from the respective longitudinal portions and such that optical power coupling between the respective S-shaped portions of output waveguides of the first and second pairs is substantially inhibited.
SG180386A1	Implantable device for detecting variation in fluid flow rate	According to embodiments of the present invention, an implantable device for detecting variation in fluid flow rate is provided. The implantable device includes: a substrate having an active element arrangement; a sensor arrangement having a first portion that is mechanically secured and a second portion that is freely deflectable, the sensor arrangement in electrical communication with the active element arrangement, wherein the active element arrangement is configured to detect changes in deformation of the sensor arrangement and produce an output in response to the detected changes; and at least one inductive element mechanically coupled to the substrate and in electrical communication with the active element arrangement, wherein the inductive element is adapted to power the active element arrangement through inductive coupling to an excitation source, and wherein the inductive element is adapted to transmit the output associated with the detected changes in the sensor.
SG181335A1	A method of determining as to whether a received signal includes a data signal	-
SG180675A1	Obtaining data for automatic glaucoma screening, and screening and diagnostic techniques and systems using the data	A non-stereo fundus image is used to obtain a plurality of glaucoma indicators. Additionally, genome data for the subject is used to obtain genetic marker data relating to one or more genes and/or SNPs associated with glaucoma. The glaucoma indicators and genetic marker data are input into an adaptive model operative to generate an output indicative of a risk of glaucoma in the subject. In combination, the genetic indicators and genome data are more informative about the risk of glaucoma than either of the two in isolation. The adaptive model may be a two-stage model, having a first stage in which individual genetic indicators are combined with respective portions of the genome data by first adaptive model modules to form respective first outputs, and a second stage in which the first outputs are combined by a second adaptive mode. Texture analysis is performed on the fundus images to classify them based on their quality, and only im

SG180364A1	A transmitter with modulation	A transmitter with modulation comprising a phase changing stage having a first switch and a second switch coupled to the first switch, a first transistor and a second transistor individually coupled to the each switch. The transmitter is configured to receive a phase changing signal having a first state and a second state. The first switch is configured to operate in an opposing manner to the second switch such that only the first transistor is configured to be turned on in the first state and only the second transistor is configured to be turned on in the second state upon receipt of the phase changing signal by the switches so as to achieve a change in an output phase of the transmitter when the phase changing signal switches from the first state to the second state.
US8194247B2	SHG quantification of matrix-related tissue dynamic and disease	A microscope for optical imaging of high optical scattering coefficient biological tissue, comprising an optical excitation source for irradiating a scan area of the sample and generating optical emissions, wherein the sample has a first face facing away from the source and a second face facing the source. A two dimensional element for scanning the light over the sample; a focusing element having a numerical aperture NA ₁ to focus the light onto the sample; a first optical condenser to collect light from the first face, the collected light comprising source transmitted light and first optical emission generated in the sample, the condenser having a NA ₂ larger than NA ₁ ; an optical filter to block the transmitted source light; an aperture with a size corresponding to the irradiated area of the sample, the aperture at the conjugate image position of the sample generated by the condenser; and an optical detector collecting light from the first face for detecting the first optical emission from the scan area.
US8180623B2	Integration of a discrete event simulation with a configurable software application	In general terms, the invention can be described as a computer system for enhancing the performance of underlying policies and execution-rules of real-world activities. The computer system includes a demand input section for providing demand information to drive the system. A real-time software application has a series of discrete steps for implementing the underlying policies and execution-rules of the activities and converts the demand information into instructions. A simulation-time operations-simulation model implements the underlying policies and execution-rules of the activities and receives the instructions. A control section includes a synchronization clock which synchronizes the discrete steps of the software application with the operations-simulation model by delaying the execution of some of the discrete steps and which communicates the instructions from the software application to the operations-simulation model. An output section outputs data to enhance the performance of the underlying policies and the execution-rules of the activities.
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[JP4850418B2](#)

ZCP detection system and method PROBLEM TO BE SOLVED: To simply and strongly carry out the zero-crossing point (ZCP) detection

SG171383A1	A light emitting diode structure and a method of forming a light emitting diode structure	A light emitting diode structure and a method of forming a light emitting diode structure are provided. The structure comprises a superlattice comprising, a first barrier layer; a first quantum well layer comprising a first metal-nitride based material formed on the first barrier layer; a second barrier layer formed on the first quantum well layer; and a second quantum well layer comprising the first metal-nitride based material formed on the second barrier layer; and wherein a difference between conduction band energy of the first quantum well layer and conduction band energy of the second quantum well layer is matched to a single or multiple longitudinal optical phonon energy for reducing electron kinetic energy in the superlattice.
SG171165A1	A multiple access communication system	A multiple access communication system is disclosed herein. In a described embodiment, there is disclosed a method of allocating system bandwidth of the communication system and the method comprises, at step (402), dividing the system bandwidth of the multiple access communication system to form resource blocks amongst which there is one or more pairs symmetric at a carrier frequency; at step (404), assigning a value to each resource block based on the channel qualities and the correlation between the resource block and its counterpart resource block symmetric to the carrier frequency; and at step (406), the symmetric resource blocks are mapped to form respective resource groups based on the values for allocation to respective mobile devices for signal transmission.
SG170387A1	A method for forming metal capped substrate imprints	A method for selectively depositing a metal layer on a substrate is provided. The method comprises the steps of:(a) providing a mold having an imprint forming surface coated with said metal layer thereon, wherein said imprint forming surface comprises a first region and a second region, and wherein said first region is dimensioned to have a greater surface area compared to said second region; and(b) contacting said mold to said substrate to form an imprint on said substrate and to simultaneously selectively deposit said metal layer from said first region of said mold to said imprint on said substrate.
SG169724A1	A substrate having a surface thereon for inhibiting adhesion of a target cell thereon and a method of preparing the same	A substrate having a surface for inhibiting adhesion of a target cell thereon, the substrate comprising an array of generally longitudinal projections having a longitudinal axis that extends from the surface of said substrate and having an aspect ratio of at least 2.5, wherein adjacent projections of said array are configured on the substrate such that the projections at least partially inhibit adhesion of a target cell thereon.
SG169473A1	A method for converting a sensor capacitance under parasitic capacitance conditions and a capacitance-to-voltage converter circuit	A method for converting a sensor capacitance under parasitic capacitance conditions and a capacitance-to-voltage (CV) converter circuit for converting a sensor capacitance under parasitic capacitance conditions are provided. The method comprises the step of using a two stage operational amplifier (op-amp) in non-unity-gain configuration, wherein the two stage op-amp is chosen to be unstable in unity-gain configuration for reducing power consumption.
SG169717A1	Powered caster wheel assembly	A powered caster wheel assembly is provided. The assembly comprises a first actuator for driving a wheel

US7917361B2

SG166436A1	Antifouling compounds and use thereof	The present invention relates to the use of compounds which have the following general formula (I), wherein R1 and R2 are independently selected from optionally substituted aryl, optionally substituted C1 to C12 alkyl and H; and R3 and R4 are independently selected from hydroxy, optionally substituted C1 to C6 alkyl, optionally substituted phenyl and H, in a method of preventing or reducing fouling, particularly in the marine environment. The compounds of the present invention have the considerable advantage of providing the antifouling coating market with an organic alternative to the existing technology which relies heavily on the addition of copper to obtain significant antifouling effects. The compounds we have developed may be used as cheap, easy to prepare additives that do not contain metals and therefore have reduced toxicity in marine environment.
SG165854A1	A method and system for concentration detection	A method and system for concentration detection. The method for concentration detection comprises the steps of extracting temporal features from brain signals; classifying the extracted temporal features using a classifier to give a score x1; extracting spectral-spatial features from brain signals; selecting spectral-spatial features containing discriminative information between concentration and non-concentration states from the set of extracted spectral-spatial features; classifying the selected spectral-spatial features using a classifier to give a score x2; combining the scores x1 and x2 to give a single score and determining if the subject is in a concentration state based on the single score.
SG165550A1	System and method for monitoring water quality	A system and system for monitoring water quality. The system co

[US7791440B2](#)

Microfabricated system for magnetic field generation and focusing

A method of forming, in or on a Si substrate, planar micro-coils with coil windings of high aspect ratio (>3) and a wide variety of geometric shapes. The micro-coils may be formed on a Si substrate and be embedded in a dielectric, or they may be formed in trenches within a Si substrate. The micro-coils may] M

[SG159310A1](#)

Sugar-based surfactant

SG156783A1	Ultraviolet detector and dosimeter	A UV light detector is disclosed that has a UV sensing element comprising a substrate and a thin film layer formed on the substrate. The thin film layer is for receiving and converting UV light into electricity for a photovoltaic output. First and second electrodes are formed on one surface of the thin film layer and are configured to form an electric polarization in the thin film layer between the first and second electrodes and to collect the photovoltaic output. There is also an amplifier and an output display. The UV sensing element is configured to collect the photovoltaic output, the amplifier being configured to receive the photovoltaic output from the UV sensing element, the output display being configured to provide a display when UV light is received at the one surface, the display being derived from the photovoltaic output. A UV dosimeter is also disclosed.
SG156272A1	Method and apparatus for reorientated reconstruction of computed tomography images of planar objects	A system and method for micro computed tomography (CT) reconstruction of position scan data of planar objects, such as stacked integrated circuit chips and/or PCB, that automatically determines object orientation is disclosed for a preferred orientation of the reconstructed images. The object orientation of the sinogram of the scanning data is determined such that the reconstruction may be performed with any starting position. Additionally, planar object scan reconstructions with either a higher resolution in the thickness dimension without increasing the total computation resource or a faster processing speed under a given resolution in the thickness dimension may be achieved. The tilting angle with respect to the rotation axis may also be determined to perform a image rotation after a multi-slice reconstruction or cone-beam reconstruction.
US7611840B2	Method and device for the treatment of biological samples	A device for sample tissue disruption and/or cell lysis comprising: a piezoelectric material; and at least a second material in contact with the piezoelectric material; and wherein the second material has an uneven surface on an opposite side to that in contact with the piezoelectric material. The device may be made by assembling at least three layers and membranes for the valves and pumps. The piezoelectric material is actuated by an external voltage source to generate cavitation, which disrupts tissue and/or lyses cells, in particular by a modulated alternative external voltage. The invention further provides a method of disrupting tissue and/or lysing cells in a device. Also provided is a piezoelectric device comprising a piezoelectric material in contact with a second material, and wherein the second material has an uneven surface on an opposite side to that in contact with the p

[SG152706A1](#)

Apparatus for processing a sample

[SG150070A1](#)

Recirculating reactor

The invention provides a recirculating reactor for converting a substrate to a product. The reactor comprises a reaction chamber and a recirculation system, said recirculation system comprising a separator. The reaction chamber contains a catalyst, and comprises a chamber body, a chamber inlet and a chamber outlet. The recirculation system id c μ a

US7486548B2

[SG135620A1](#)

Group iii nitride white light emitting diode

A white light-emitting diode is fabricated by metal organic chemical vapor deposition (MOCVD), which can produce a broad band emission covering

SG125124A1	Enhanced multimode interference coupler	-
US7092692B2	Threshold voltage (V_{th}), power supply (VDD), and temperature compensation bias circuit for CMOS passive mixer	A biasing circuit for a CMOS passive mixer core to stabilize its conversion gain, linearity and noise figure. The RF inputs are fed differentially from the two RF ports, the LO inputs are fed differentially from the two LO ports, and the IF outputs are obtained at the two IF ports. The biasing circuit comprises a reference current derived from the bandgap voltage and a n-channel MOSFET transistor. The conversion gain is stabilized by keeping the $V_{gs}-V_{th}$ value of the passive mixer core almost constant at all process corners, temperature and power supply changes. This is achieved by implementing V_s in such a way that it will increase the same amount as VDD decreases, and that V_s will decrease the same amount as V_{th} increases.
US7056471B1	Ternary and quarternary nanocrystals, processes for their production and uses thereof	The present invention relates to nanocrystals consisting of a homogeneous ternary or quaternary alloy having the composition $M_{11}-xM_2xA$ and $M_{11}-xM_2xAyB_{1-y}$, respectively, a process for its production, as well as to uses of such nanocrystals such as as short wavelength light-emitting devices, and in the detection of analytes, in particular biomolecules.
US7047235B2	Method and apparatus for creating medical teaching files from image archives	A method for retrieving medical

US6885038B2	Light-emitting polymers and polymer light-emitting diodes	Disclosed are compounds according to formula (I), wherein R' and R'' are selected from the group consisting of R'=SiR1R2R3 and R''=H; R'=SiR1R2R3 and R''=SiR4R5R6; and R'=Ar1SiR1R2R3 and R''=Ar2SiR4R5R6; R1, R2, R3, R4, R5, and R6 are independently selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, cycloalkyl, cycloalkenyl, cycloalkynyl, arylalkyl, arylalkenyl, and arylalkynyl; Ar1 and Ar2 are independently selected from the group consisting of arylene, arylenealkylene, arylenealkynylene, heteroarylene, heteroarylenealkylene, heteroarylenealkenylene and heteroarylenealkynylene; and n is at least 20. Such compounds may be used as an emissive layer in a polymer light-emitting diode (PLED), which itself may be used in electroluminescent devices.
SG109217A1	Reversal imprint technique	The present invention relates to a method for imprinting a micro-/nano-structure on a substrate, the method comprising (a) providing a mold containing a desired pattern or relief for a microstructure; (b) applying a polymer coating to the mold; and (c) transferring the polymer coating from the mold to a substrate under suitable temperature and pressure conditions to form an imprinted substrate having a desired micro-/nano-structure thereon.
US6850741B2	Method for selecting switched orthogonal beams for downlink diversity transmission	A scheme for selecting two beams in a switched beam antenna system for providing downlink communications in a downlink channel, the switched beam antenna system providing uplink reception and downlink transmission is described. The scheme involves selecting a pair of beams based on the uplink reception of the switched beam antenna system, and determining from the pair of beams a corresponding pair of orthogonal beams. The scheme also involves providing the pair of orthogonal beams as a pair of transmit beams for the downlink transmission of the switched beam antenna system.
US6716661B2	Process to fabricate an integrated micro-fluidic system on a single wafer	Formation of micro-fluidic systems is normally achieved using a multi-wafer fabrication procedure. The present invention teaches how a complete micro-fluidic system can be implemented on a single chip. The invention uses only dry etch processes to form micro-chambers. In particular, it makes use of deep reactive ion etching whereby multiple trenches of differing depths may be formed simultaneously. Buried micro-chambers are formed by isotropically increasing trench widths using an etchant that does not attack the mask so the trenches grow wider beneath the surface until they merge. Deposition of a dielectric layer over the trenches allows some trenches to be sealed and some to be left open. Micro-pumps are formed by including in the micro-chamber roof a layer that is used to change chamber volume either through electrostatically induced motion or through thermal mismatch as a result of its being heated.
SG98465A1	A gain compensation circuit for CMOS amplifiers	A gain compensation circuit that compensates for variations in gain of a high gain, high frequency amplifier due to changes in mobility of transistor and resistor components of the amplifier. The gain compensation circuit includes a current adjustment circuit and a gain factor evaluation circuit. The current adjustment circuit modifies a bias current provided to each amplifier stage of a plurality of amplifier stages that make up the high gain, high frequency amplifier. The modification of the bias current adjusts the gain factor of the amplifier. The gain factor evaluation circuit is in communication with the current adjustment circuit to determine changes in the gain factor of the high gain, high frequency amplifier. From the determination, the gain factor evaluation circuit provides a compensation signal to the current adjustment circuit indicating a modification factor for the biasing current for each amplifier stage.